

Name

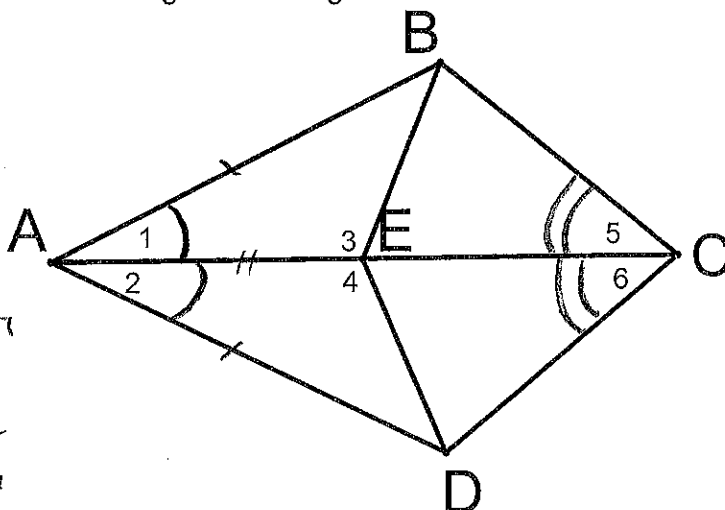
Key

Date

201 Using More than One Pair of Congruent Triangles

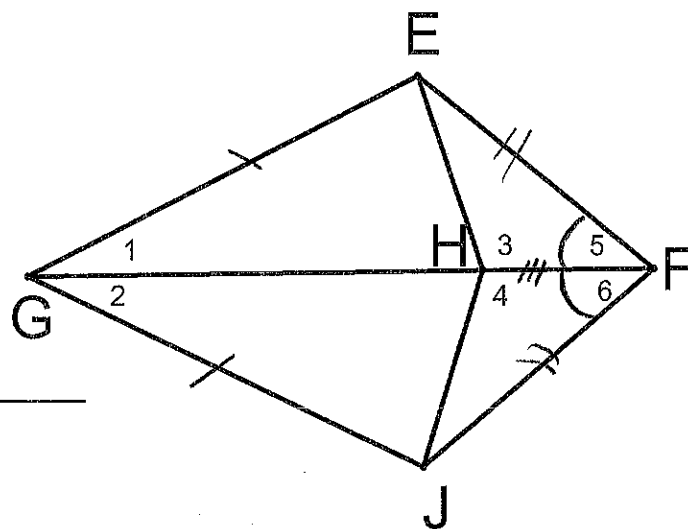
1. Given: $\angle 1 \cong \angle 2$; $\angle 5 \cong \angle 6$
 Prove: $\angle 3 \cong \angle 4$

Statements	Reasons
1. ~	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive
3. $\triangle ABC \cong \triangle ADC$	3. ASA
4. $\overline{AB} \cong \overline{AD}$	4. CPCTC
5. $\overline{AE} \cong \overline{AE}$	5. Reflexive
6. $\triangle ABE \cong \triangle ADE$	6. SAS
7. $\angle 3 \cong \angle 4$	7. CPCTC

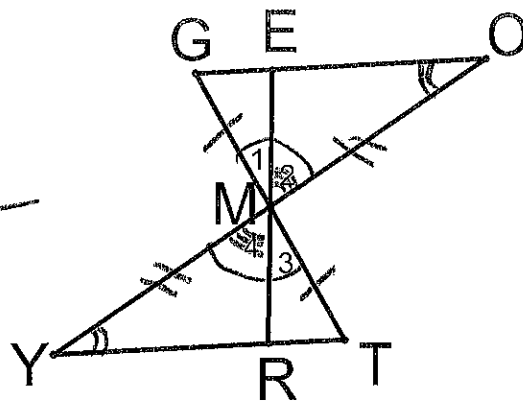


2. Given: $\overline{GE} \cong \overline{GJ}$; $\overline{EF} \cong \overline{JF}$
 Prove: $\overline{EH} \cong \overline{JH}$

Statements	Reasons
1. ~	1. Given
2. $\overline{GF} \cong \overline{GF}$	2. Reflexive
3. $\triangle GEF \cong \triangle GJF$	3. SSS
4. $\angle 5 \cong \angle 6$	4. CPCTC
5. $\overline{HF} \cong \overline{HF}$	5. Reflexive
6. $\triangle EHF \cong \triangle JHF$	6. SAS
7. $\overline{EH} \cong \overline{JH}$	7. CPCTC



3. Given: M is the midpoint of \overline{GT} and \overline{OY}
 Prove: $\overline{EM} \cong \overline{RM}$

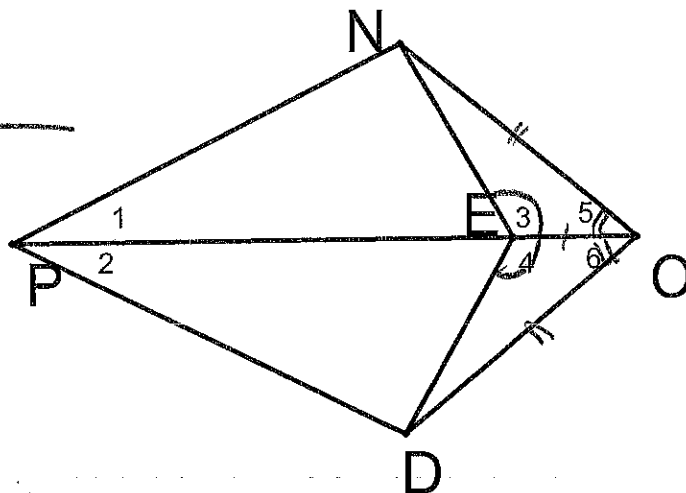


Statements	Reasons
① ~	① Given
② $\overline{OM} \cong \overline{YM}$ $\overline{GM} \cong \overline{TM}$	② def of midpt
③ $\angle GMO \cong \angle TMY$	③ Vert $\angle s \cong$
④ $\triangle GMO \cong \triangle TMY$	④ SAS
⑤ $\angle O \cong \angle Y$	⑤ CPCTC
⑥ $\angle 2 \cong \angle 4$	⑥ Vert $\angle s \cong$
⑦ $\triangle OME \cong \triangle YMR$	⑦ ASA

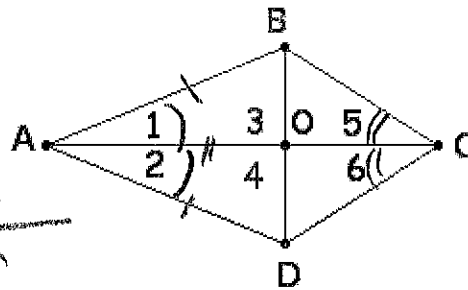
⑧ $\overline{EM} \cong \overline{RM}$ ⑧ CPCTC

4. Given: $\angle 3 \cong \angle 4$; $\angle 5 \cong \angle 6$
 Prove: $\angle PNO \cong \angle PDO$

Statements	Reasons
① $\angle 3 \cong \angle 4$ $\angle 5 \cong \angle 6$	① Given
② $\overline{EO} \cong \overline{EO}$	② Reflexion
③ $\triangle NEO \cong \triangle DEO$	③ ASA
④ $\overline{NO} \cong \overline{DO}$	④ CPCTC
⑤ $\overline{PO} \cong \overline{PO}$	⑤ Reflexion
⑥ $\triangle PNO \cong \triangle PDO$	⑥ SAS
⑦ $\angle PNO \cong \angle PDO$	⑦ CPCTC



5.

Given: $\angle 1 \cong \angle 2$; $\angle 5 \cong \angle 6$ Prove: $\overline{AC} \perp \overline{BD}$ 

Statements

Reasons

① $\angle 1 \cong \angle 2$ $\angle 5 \cong \angle 6$

① Given

② $\overline{AC} \cong \overline{AC}$

② Reflexive

③ $\triangle ABC \cong \triangle ADC$

③ ASA

④ $\overline{AB} \cong \overline{AD}$

④ CPCTC

⑤ $\overline{AO} \cong \overline{AO}$

⑤ Reflexive

⑥ $\triangle ABO \cong \triangle ADO$

⑥ SAS

⑦ $\angle 3 \cong \angle 4$

⑦ CPCTC

⑧ $\overline{AC} \perp \overline{BD}$

⑧ If 2 lines intersect to form a linear pair of \cong \angle s, then they are \perp

6.

Given: $\overline{AC} \perp \overline{BE}$; $\overline{AC} \perp \overline{FD}$; $\overline{BC} \cong \overline{AD}$; $\overline{BA} \cong \overline{CD}$ Prove: $\overline{BE} \cong \overline{FD}$

Statements

Reasons

① \sim

① Given

② $\overline{AC} \cong \overline{AC}$

② Reflexive

③ $\triangle ABC \cong \triangle CDA$

③ SSS

④ $\angle 1 \cong \angle 2$

④ CPCTC

⑤ $\angle BEA$ + $\angle DFC$ are Rt \angle s

⑤ def \perp lines

⑥ $\angle BEA \cong \angle DFC$

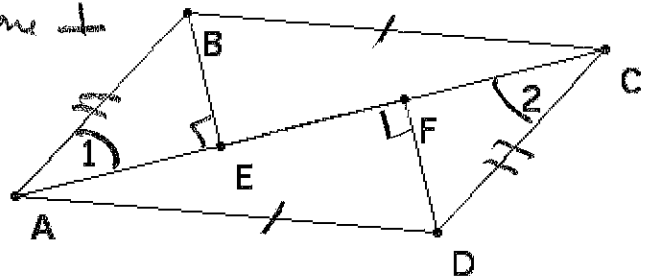
⑥ All Rt \angle s \cong

⑦ $\triangle ABE \cong \triangle CDF$

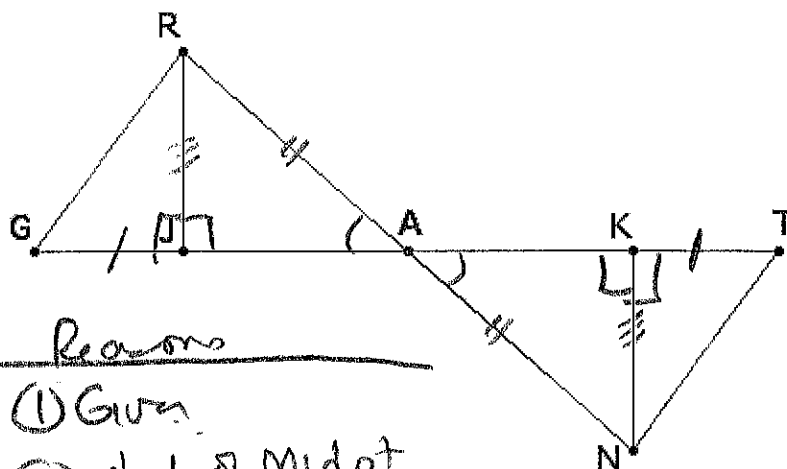
⑦ AAS

⑧ $\overline{BE} \cong \overline{DF}$

⑧ CPCTC



7.

Given: $\overline{GJ} \cong \overline{KT}$;A is the midpoint of \overline{RN} $\overline{RJ} \perp \overline{GT}$; $\overline{KN} \perp \overline{GT}$ Prove: $\angle G \cong \angle T$ 

Statements	Reasons
① \sim	① Given
② $\overline{RA} \cong \overline{NA}$	② def of Mid pt
③ $\angle RJA + \angle NKA$ are Rt \angle s	③ def of \perp lines
④ $\angle RJA \cong \angle NKA$	④ All Rt \angle s \cong
⑤ $\angle RAJ \cong \angle NAK$	⑤ Vert \angle s \cong
⑥ $\triangle RAJ \cong \triangle NAK$	⑥ AAS
⑦ $\overline{RJ} \cong \overline{NK}$	⑦ CPCTC
⑧ $\angle RJG + \angle NKT$ are Rt \angle s	⑧ def \perp lines
⑨ $\angle RJG \cong \angle NKT$	⑨ All Rt \angle s \cong
⑩ $\triangle RJG \cong \triangle NKT$	⑩ SAS
⑪ $\angle G \cong \angle T$	⑪ CPCTC

alternate ending

- | | | |
|---------------------------------------|------------------|---|
| ⑦ $\overline{JA} \cong \overline{KA}$ | ⑦ CPCTC | ⑬ $\triangle GAR \cong \triangle TAN$ ⑬ SAS |
| ⑧ $GJ = KT$ $JA = KA$ | ⑧ def of \cong | ⑭ $\angle G \cong \angle T$ ⑭ CPCTC |
| ⑨ $GJ + JA = KT + KA$ | ⑨ Addition | |
| ⑩ $GJ + JA = GA$ | ⑩ SAP | |
| $KT + KA = AT$ | | |
| ⑪ $GA = AT$ | ⑪ Subst | |
| ⑫ $\overline{GA} \cong \overline{AT}$ | ⑫ def of \cong | |